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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,123	02/07/2001	Anantha R. Sethuraman	5298-02501	9269

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EXAMINER

LEE, HSIEN MING

ART UNIT PAPER NUMBER

2823

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/779,123

Applicant(s)

SETHURAMAN ET AL.

Examiner

Hsien-Ming Lee

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7-12, 15 and 17-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 1-4, 7-12, 15 and 17-27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Remarks

1. Claims 26 and 27 are newly added. Claims 1-4, 7-12, 15 and 17-27 are pending in the application.

Claim Objections

2. Claims 1, 9, 17 are objected to because of the following informalities:

The terms “relatively wide trench” and “relatively narrow trenches” are relative terms and render indefinite because the terms do not provide a standard for measuring the degree intended. See M.P.E.P. 2173.05 (b) The following changes are suggested:

Changing “relatively wide trench” into – a first trench relatively wide compared to a second trench --; and changing “relatively narrow trenches” into – second trenches relatively narrow compared to the first trench --.

In addition, in-consistent term appears in the same claim, i.e. “laterally spaced dummy trenches” (claim 9, line 2 and claim 17, line 2) versus “dummy trenches” (claim 9, line 5 and claim 17, line 4).

Allowable Subject Matter

3. Claims 1, 9 and 17 are would be allowable if rewritten or amended to overcome the objection as set forth in this Office action.
4. Claims 2-4, 7, 8, 10-12, 15, 22, 27, 19-26 are objected to as being dependent upon a objected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. The following is a statement of reasons for the indication of allowable subject matter:

The closest prior art of record, Jaso et al. to US 6,093,631, teaches a method, comprising:

- etching a plurality of laterally spaced dummy trenches 20 into a dielectric layer 14 between a first trench 15d and a series of second trenches 15a/15b/15c (Fig. 11B);
- filling the dummy trenches 20 and the first 15d and the series of second trenches 15a/15b/15c with a conductive material 16 (i.e. copper or aluminum or tungsten)(Fig. 11C and col.7, lines 3-7); and
- polishing the conductive material 16 to form dummy conductors in the dummy trenches 20 and interconnect in the first trench 15d and the series of second trenches 15a/15b/15c.

In contrast, Jaso et al. at least neither teach nor suggest that the first trench 15d is a *relatively wide trench compared to second trenches 15a-15c* and the series of second trenches 15a-15c are *relatively narrow trenches compared to the first trench 15d*; that polishing the conductive material by applying a liquid substantially *free of particulate matter* between an abrasive polishing surface and the conductive material.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hsien-Ming Lee whose telephone number is 571-272-1863. The examiner can normally be reached on M-F (9:00 ~ 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hsien-Ming Lee
Examiner
Art Unit 2823

April 21, 2004

A handwritten signature in black ink, appearing to read "Hsien-Ming Lee", with a long horizontal flourish extending to the right.